3005-0203260005

MOUND

Environmental Restoration Program

OhioEPA

MOUND PLANT
Closeout Report
Magazine 6

Final
March 2002

Closeout Report

Magazine 6

DOE Mound Plant
Miamisburg, Ohio 45343

Prepared for:

United States Department of Energy
Miamisburg Environmental Management Project
P.O. Box 3020
Miamisburg, Ohio 45343-3020

Prepared by:

BWXT of Ohio, Inc.

TABLE OF CONTENTS

Section Page

1.0 Purpose 1
2.0 Background 1
3.0 Actions Taken 1
4.0 Problems Encountered 2
5.0 Resources Committed 2
6.0 References 3

Tables

Table 1: Materials Disposition 2
Table 2: Personnel Organization for the Demolition 2
Table 3: Total Cost 3

Appendices

Appendix A Figures
Figure 1: Location of Magazine 6
Figure 2: Magazine 6 and Vicinity
Figure 3: Magazine 6 Before and After Demolition

Appendix B Work Package

Appendix C Radiological Summary

1.0 Purpose

This is the final report documenting completion of the demolition of Magazine 6 located in the 'Test Fire Valley' of the DOE Mound Site as shown in Figures 1 and 2 (Appendix A). This project was defined in the Work Package for Magazine 6 Demolition (Reference 1), which is included as Appendix B. The scope of work relating to this building is considered complete.

2.0 Background

Magazine 6 was a single-story storage bunker with reinforced concrete walls and roof. According to the dates on the construction drawings, Magazine 6 is believed to have been built in 1956 (Reference 2). The building was originally designed, constructed, and used for the storage of energetic materials, and later used to store ammunition and other "explosive" materials. The building was vacated and considered "out-of-service" from 1995 until its demolition in 2001.

Magazine 6 was a rectangular building with two doors as shown on Figure 3, Appendix A. Each door entered into a separate room or cell. Each of the cells measured approximately 6 feet by 6 feet. The exterior building dimensions were 16 feet by 8 feet. The building had a canopy and parapet across the top; the parapet appeared to be a remnant of the original exterior retaining walls that had previously been removed. Per the Work Package, the concrete slab was left in place following demolition in order to minimize disruption to the tenant and to leave the slab level with the Building 49 sidewalk (Figure 3).

3.0 Actions Taken

Magazine 6 was radiologically surveyed in 1997 prior to being binned No Further Action (NFA) by the DOE/EPA Core Team on May 14, 1997. The 1997 radiological sampling results were all below surface release criteria (direct readings <100 dpm/100cm^2 for alpha, and <5000 dpm/100cm^2 for beta). Dose rate readings and smear readings were non-detects (Appendix C).

The demolition of Magazine 6 was accomplished as a non-CERCLA project. Demolition commenced on November 5, 2001 and was completed on November 12, 2001. Photographs taken before and after demolition are provided in Figure 3 (Appendix A).

All preparation and demolition activities were performed in accordance with a detailed Work Package (Appendix B) for safe shutdown of utilities, site access control, structure demolition, and debris removal. There were no Potential Release Sites (PRSs) associated directly with Magazine 6; however, there were PRSs in the vicinity (Figure 2, Appendix A). Demolition material, waste, and debris were dispositioned as noted in Table 1.

Table 1 - Materials Disposition

Material	Quantity	Method	Location
Construction Debris (concrete/rebar)	800 cubic feet	Landfill	Stony Hollow
Asbestos	0 cubic feet	N/A	N/A
Liquid Waste	0 gallons	N/A	N/A

N/A – not applicable

4.0 Problems Encountered

Magazine 6 was successfully demolished per the Work Package. No problems requiring deviation from the Work Package were encountered.

5.0 Resources Committed

Table 2 lists the personnel organization for the demolition. Table 3 provides a summary of the total demolition cost.

Table 2 - Personnel Organization for the Demolition

Agencies or Parties Involved	Contact	Description of Participation
US EPA HSRM-6J 77 W. Jackson Chicago, IL 60604 312-886-5787	Tim Fischer	Federal agency responsible for Mound Plant oversight.
Ohio EPA 410 E. Fifth Street Dayton, OH 45402-2911 937-285-6468	Brian Nickel	State agency responsible for Mound Plant oversight.
DOE/MEMP P.O. Box 66 1 Mound Road Miamisburg, OH 45343-0066 937-865-3620	Ronald Church / Frank Schmaltz	DOE/MEMP Project Manager responsible for project oversight and success.

Table 2 - Personnel Organization for the Demolition

Agencies or Parties Involved	Contact	Description of Participation
BWXT of Ohio, Inc. Main Hill Project P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4071	Budd Thompson	Provided the DOE/MEMP Project Manager with technical assistance, administrative support, sampling, decontamination, photo and site documentation, site safety, and report preparation.
BWXT of Ohio, Inc. General Superintendent and Equipment Manager P.O. Box 3030 1 Mound Road Miamisburg, OH 45343-3030 937-865-4071	Budd Thompson	Provided the personnel and equipment necessary for the demolition.

Table 3 - Total Cost

Summary Activity	Cost
Work Planning	$1,194
Decontamination & Demolition	$5,691
Total Cost	**$6,885**

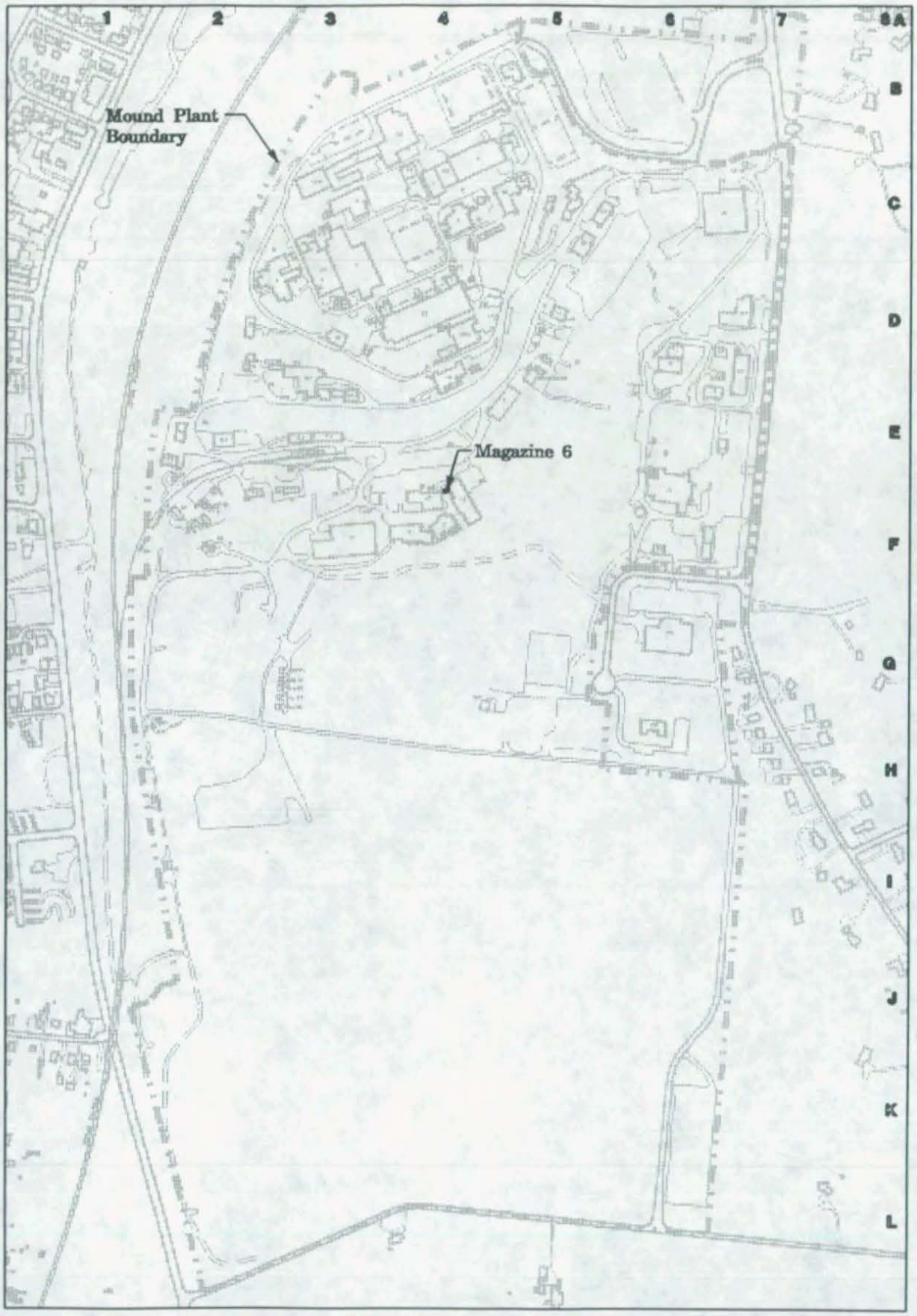
6.0 References

Reference 1 Magazine 6 Demolition SMPP/TFV, Work Package No. SM-27780-01, October 2001 (provided in Appendix B)

Reference 2 White Paper, Magazine (Building) 6 Structural History and Process History Summary Background Document, BWXTO, ESC Department, October 2001

Appendix A

Figures



Legend

Structures
Paved roadway
Unpaved roadway
Railroad
Water course
Fence
Mound Plant boundary
Contour line

0 100 200 400 600 800 1000
Scale In Feet

01/28/02	ISSUE FOR GENERAL USE	SSP			
DATE	REVISION	BY	CHKR	ENG	M

MOUND
Environmental Restoration Geographic Information System

SHEET 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ISSUE
SHEET 1 2 3 4 5 6
ISSUE A
PART CLASSIFICATION

TITLE CLASSIFICATION
Figure 1
Location of Magazine 6

DRAWING CLASSIFICATION: UNCLASSIFIED
SIZE: D
DRAWING NUMBER: gen_site_plan.dgn
JOB NUMBER
DWG TYPE: SITE
PRNG
CAGEC
SCALE: Graphic
SHEET 1 OF
STATUS: MD-REL-09/14/99
ORIGIN: MSTATION / J

gen_site_plan.dgn

PRS Point

PRS Area

PRS Line

ISS	DATE	REVISION	BY	CHKR	ENG	LPREC	APVD	N
	03/04/02		SSF					

MOUND

Environmental Restoration Geographic Information System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ISSUE																				

SHEET	1	2	3	4	5	6
ISSUE						

PART CLASSIFICATION

Figure 2
Magazine 6
and Vicinity

DRAWING CLASSIFICATION: UNCLASSIFIED

SIZE | DRAWING NUMBER: vicinity.dgn | JOB NUMBER

DWG TYPE: STE | PROJ: ER-GIS | CADD | SCALE | SHEET 1 OF

STATUS: MD-REL-***/***/*** | ORIGIN: MSTATION / J

Figure 3:
Magazine 6

Before and After Demolition

Appendix B

Work Package

MAGAZINE 6 DEMOLITION

SMPP/TFV

We Approach Our Goals Head On

Work Package Name:	**Magazine 6 Demolition**
Work Package Number:	**SM-27780-01**
Work Package Preparer:	**R.C. Ransbottom**

WORK PACKAGE / PRELIMINARY HAZARD ANALYSIS

☒ **Office Master Copy** (Original Approval Signatures) ☐ **Field Working Copy** (Original Field Sign -Offs) ☐ **Review Copy** [Note: Mark this section in color] ☐ **Other Copy**

The Project Engineer is responsible for completing Sections 1 through 10. On subcontractor projects, the subcontractor shall complete sections 6, 9, and 10.

1. WORK PACKAGE TITLE: Magazine 6 Demolition

2. WORK PACKAGE NUMBER. *SM - 27780 - 00*

3. WORK PACKAGE SCOPE: Demolish Magazine 6

4. WORK PACKAGE PHASES:

1.Demolish Magazine 6

2.

3.

4.

5.

Insert the proper sequence of Work Package phases for the job. A phase is a separately definable portion of the project.

5. WORK LOCATION:

Building #:Magazine 6

Room #: N/A

Other:

6. SPECIAL MATERIALS AND EQUIPMENT:

1. Concrete Cracker
2. Hoe Ram
3.
4.
5.

7. DETAILED WORK STEPS:

See attached work plan

Insert the activities to be performed during the job. Describe the specific methods of accomplishing these activities. Activities listed must be grouped under the Work Package phases listed in item 4.

1. INDUSTRIAL SAFETY AND HEALTH REQUIREMENTS

1.1. A Job Specific Hazards Analysis (JSHA) is required. The construction zone as on Drawing SM-6-001. Debris will be cleared from the immediate demolition zone as required to promote safe equipment activity.

1.2. Lock-out-tag-out procedures will be followed and electrical energy detection will be performed prior to any electrical demolition activities.

1.3. Monitoring for crystalline silica (concrete dust) will be performed periodically as determined by previous monitoring results and site Safety and Health. Site Safety and Health will be notified before the demolition of concrete begins.

1.4. Whole body vibration will be administratively controlled and by reviewing topic at Pre-job meeting.

1.5. A Hot Work Permit will be required if a torch is used for cutting and possibly for generator operation. Coordinate with site Safety and Health.

1.6. Monitoring of noise levels will be performed as determined by previous monitoring results and site Safety and Health.

2. RADIATION PROTECTION REQUIREMENTS

2.1. The magazine was rad surveyed in 1997 prior to being binned No Further Action (NFA) by the DOE/EPA Core Team. At that time, direct readings were <100 dpm/100 cm^2 for alpha, <5000 dpm/100 cm^2 for beta, dose rate readings were non-detectable, as were smear readings. Consequently, there are no rad requirements for a Radiological Work Permit (RWP).

3. ENVIRONMENTAL COMPLIANCE REQUIREMENTS

3.1. **CERCLA**

Magazine 6 demolition will be accomplished as a non-CERCLA project.

3.2. **National Emissions Standards for Hazardous Air Pollutants (NESHAPs)**

Per Environmental Practice 2.2, if buildings to be demolished have a surface area less than 72 million square feet, direct readings below MDA, and wipe results below applicable action levels, additional dose calculations are not necessary. Magazine 6's surface area is 105 square feet and direct readings and wipes were below applicable thresholds. No further calculations are necessary.

3.3. **PRSs associated with Building 6**

There are no PRSs associated directly with Magazine 6. Nearby are PRSs 67, 72, 87, 330, and 331. PRSs 67, 72, and 87 have been binned Further Assessment and the Soils Project recently conducted soil sampling. Preliminary data shows not evidence of contamination. PRSs 330 was binned No Further Action (NFA) on 2/19/97 and PRS 331 was binned NFA on 4/18/96. Both PRSs 330 and 331 were associated with underground tanks.

3.4. **Notification**

3.4.1. A Notification of Demolition and Renovation form was filed with the Regional Air Pollution Control Agency (RAPCA) on Oct. 11. At least 10 business days must expire prior to begining building demolition. There was no friable asbestos to be abated. However, the roof coating and floor tile were assumed to be Category 1 non-friable, not to be removed prior to demolition.

3.5. **Restriction of emission of fugitive dust (OAC 3745-17-08)**

Reasonably available control measures must be employed to prevent fugitive dust from becoming airborne. Visual particulate emissions from any fugitive dust source shall not exceed 20% opacity as a three-minute average. Appropriate activities would include:

3.5.1. Water misting or other suitable dust suppression will be used to minimize fugitive dust from demolition activities.

3.5.2. Periodic application of water or other suitable dust suppression to adjacent roadways and parking lots will be used to prevent dust from becoming airborne.

3.5.3. Trucks hauling debris to the on-site spoils area should be covered while in transit.

3.5.4. If present, segregate any lead pipe conduits from concrete debris going to the crusher area in order to avoid producing lead dust and particulate.

3.6. **Clean Water Act**

Water source permitting requirements do not apply, as there is no significant new or increased discharge related to this project. All inlets to the storm systems will be plugged to prevent accidental discharges to the wastewater treatment plant or the environment.

3.7. **Storm Water Pollution Prevention**

The site's National Pollutant Discharge Elimination System (NPDES) Permit No. 1IO00005*HD requires the use of control measures to ensure the quality of storm water leaving the site. These control measures and practices are outlined in the sites' Storm Water Pollution Prevention Plan OPA980099. Appropriate activities would include:

3.7.1. Redirect flow patterns around the project site to prevent storm water run-on.

3.7.2. Provide inlet protection to the storm sewer system by covering catch basins immediately adjacent to the project site and plugging roof drains at ground level until which time the underground pipes can be appropriately abandoned.

3.7.3. Exercise good housekeeping techniques by segregating materials in a timely manner, including the prompt disposal of wastes, and sweeping debris from the streets to prevent storm water pollution.

3.7.4. Water that has collected in an open excavation or in sumps, must be monitored prior to discharging to the sanitary or storm sewer systems. Contact Environmental Monitoring at extension 4188 for monitoring and review of these non-routine discharges.

3.8. **National Historic Preservation Act (NHPA)**

Magazine 6 is not listed as a historic structure with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required. However, if any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified at extension 3691. Work will be suspended until which time the items or artifacts have been recovered.

3.9. **Safe Drinking Water Act**

There is no potable water supply to Magazine 6.

3.10. **Emergency Spill Response**

There are no utility services to Magazine 6 except electrical power. There should be no regulated component that will be encountered. In the event of a major spill of any regulated substances, or the rupture of a non-isolated utility line (fire, domestic water, ethylene glycol) call **911** if using an on-site phone or **937-865-4040** if using a cell or other outside phone to report it. All spills must be contained onsite and should be prevented from entering the storm drains if possible. If spills enter the storm drains, all effluent must be retained onsite at the overflow pond.

6. CHEMICAL AND WASTE MANAGEMENT REQUIREMENTS

6.1. All waste will be managed in accordance with the Waste Management Plan for the Mound Exit Project, MD-10499. The Waste Coordinator will ensure that this is accomplished and summarize in a Job Specific Waste Management Plan, which is included below.

6.2. Due to the extensive amount of re-bar used to construct Magazine 6, it may not be practical or cost effective to dispose of the concrete rubble on site utilizing the concrete crusher. If unusable, the concrete will be taken to a construction debris landfill.

6.3. There are no fluorescent tubes or ballasts in the magazine. It has been determined that the seals on the explosion-proof lights are not asbestos containing. Therefore, they will not be removed, and will be demolished with the building. Note: If a suspect seal is encountered, contact site Safety and Health for guidance.

7. EMERGENCY PREPAREDNESS

7.1. Site Notification Procedures

7.1.1. Use **911** for all emergency services on-site. This is the first response for any emergency, spill, or release. If using a cell phone, dial **865-4040**. This number will ring into the plant 911 system.

7.1.2. Any injury, no matter how minor, shall be reported immediately to the Medical Department for evaluation and treatment. The injured employee shall report any injury to the supervisor in

charge or designee. **Note:** During off-hours and weekends, notify the Fire Department Duty Officer of any injury at x3313 (865-3313 from cell or outside phone).

7.1.3. Employees working will be notified of emergency or abnormal conditions by the plant paging system or project two-way radios. Additionally, unique sheltering and evacuation signals are available should site-wide protective actions be necessary.

7.2. Evacuation Route/Assembly Areas

The assembly area is in the roadway north of Building 87.

7.3. Take Shelter Area

The take shelter area is in the center of Building 19.

8. PRE-DEMOLITION SEQUENCE OF WORK

8.1. SITE CHARACTERIZATION

8.1.1. Physical Characterization

A structural engineering survey was performed and documented for Magazine 6 to meet the requirements of OSHA 29 CFR 1926.850(a). A walkdown of the structure was used to identify potential hazards as listed in 29 CFR 1926.850(e) through (i). It has been determined the building does not meet the criteria that cause the structure to be historically significant.

8.1.2. Radiological Characterization

Based on the radiological characterization summaries that have been performed for Magazine 6, annual surveys, and process history, there are no radiological concerns and a Radiation Work Permit will not be required.

8.1.3. Chemical and Metals Characterization

Magazine 6 was used to store totally contained energetic materials. The DOE/EPA Core Team ruled the magazine NFA which means it is safe to transition or demolish.

8.1.4. Asbestos Characterization

No asbestos-containing material was identified in connection with Magazine 6.

8.2. DEMOLITION

Preliminary:

8.2.1. Coordinate with Perkin-Elmer management (John Adams x4336) to block adjacent doors in Building 49 and 63 and the walkway to the parking lot north of Building 63. Set up a construction area using yellow caution tape to control traffic into Building 49. (See pictures 1 and 2)

8.2.2. Block adjacent storm sewer drains.

Demolition:

CAUTION

Be aware of the overhead lines above Magazine 6. These are communications lines which connect Buildings 49 and 63. (See picture 3)

8.2.3. Using the LaBounty concrete cracker and the track excavator mounted hoe ram, demolish Magazine 6. (See Picture 4)

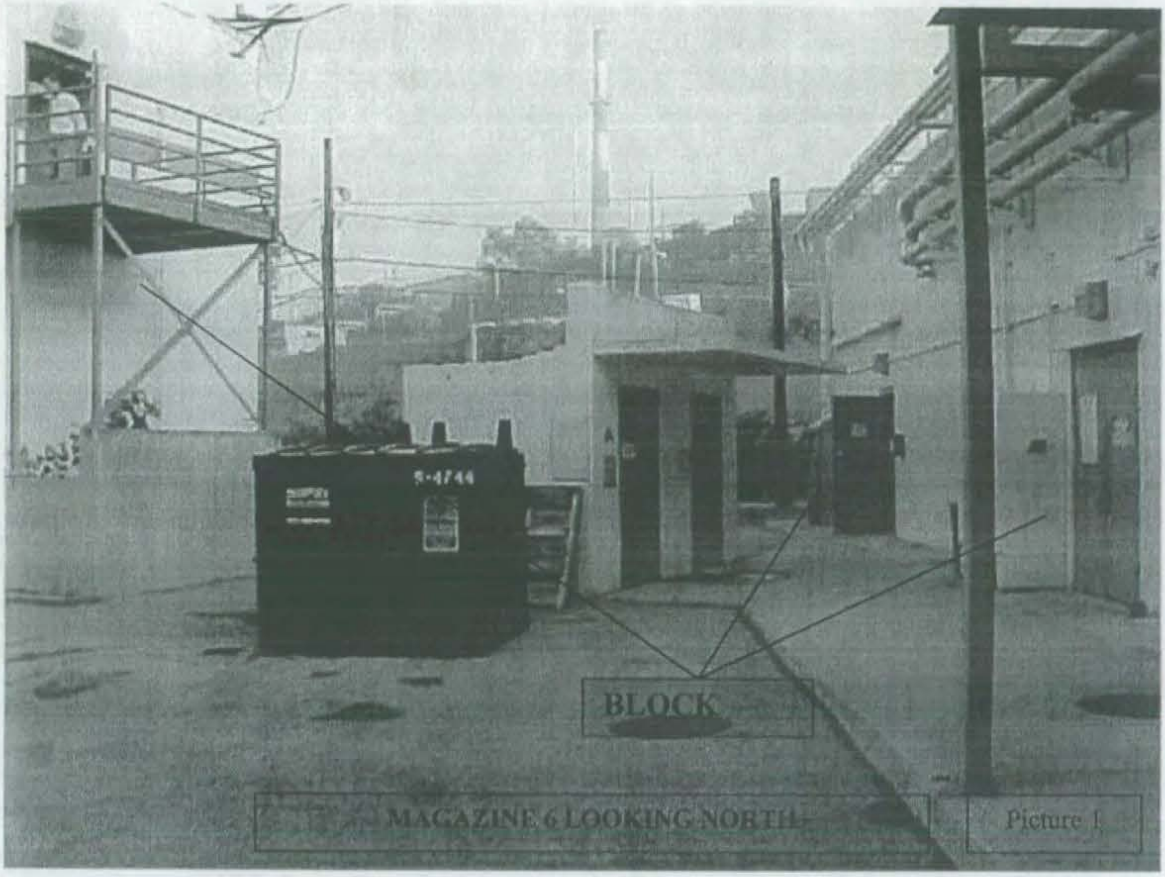
HAZARD	MITIGATION
Injury from being struck by flying material from shear or other heavy duty mechanized equipment	The manufacturer of the mechanical shear recommends a 75-foot exclusion zone to protect against personnel injury that may be caused by flying debris. No one will be permitted within a 75-foot

	distance of the shear while it is in operation. (Except-Heavy Duty Operators who will remain in the equipment cabs.) The exclusion zone for the hoe ram is 50 feet and other Heavy Duty mechanized equipment is 30 feet, except for the Bobcat which is 15 feet. Exception: a designated spotter may be closer as required.
Injury in construction area	Wear hard hat, safety glasses, and steel toe shoes at all times inside construction area. Wear safety vest while mechanical machinery, such as shear, grapple, and haulers, are in operation. (Exemption: equipment operators do not need to wear hard hats, safety glasses, or vests while inside the enclosed cab. However, the operator must wear hearing protection while operating the equipment) Wear gloves while handling demolition debris

8.2.4. Using a front loader, load the debris into rolloffs.
8.2.5. If necessary, use torch to cut off rebar.

HAZARD	MITIGATION
Fire hazard	Obtain and follow a Hot Work Permit per MD-10286 O2.

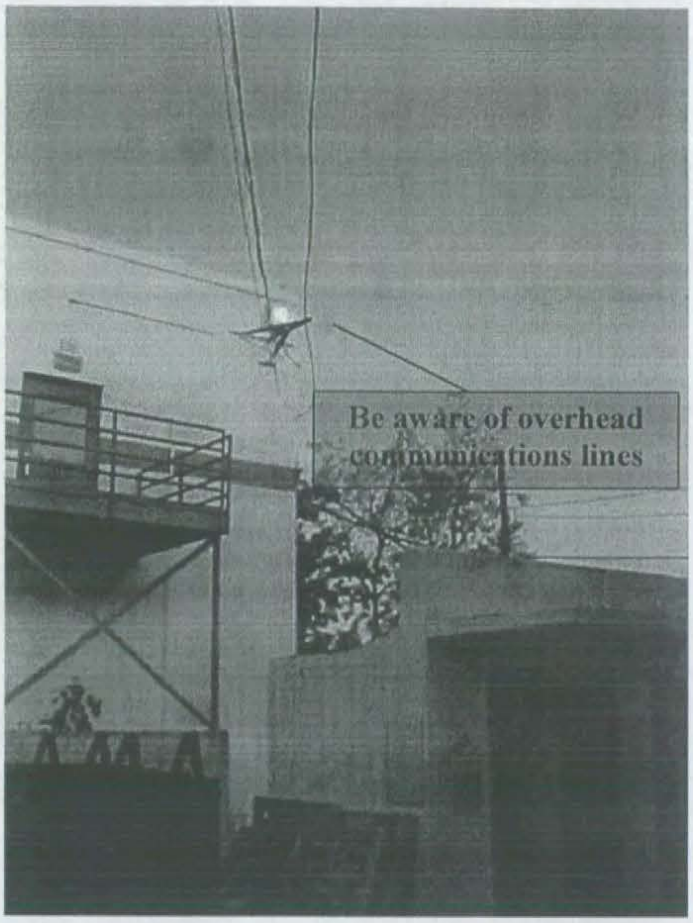
8.2.6. Coordinate with Waste Management (Willis Daniel x3822) for disposal.
8.2.7. The slab will not be removed.
8.2.8. When finished, clean up the area, remove the construction area posting, and unblock storm drains.
8.2.9. Paint any remaining tripping hazards with hazard yellow paint.
8.2.10. Notify Perkin-Elmer (John Adams x4336) when complete.

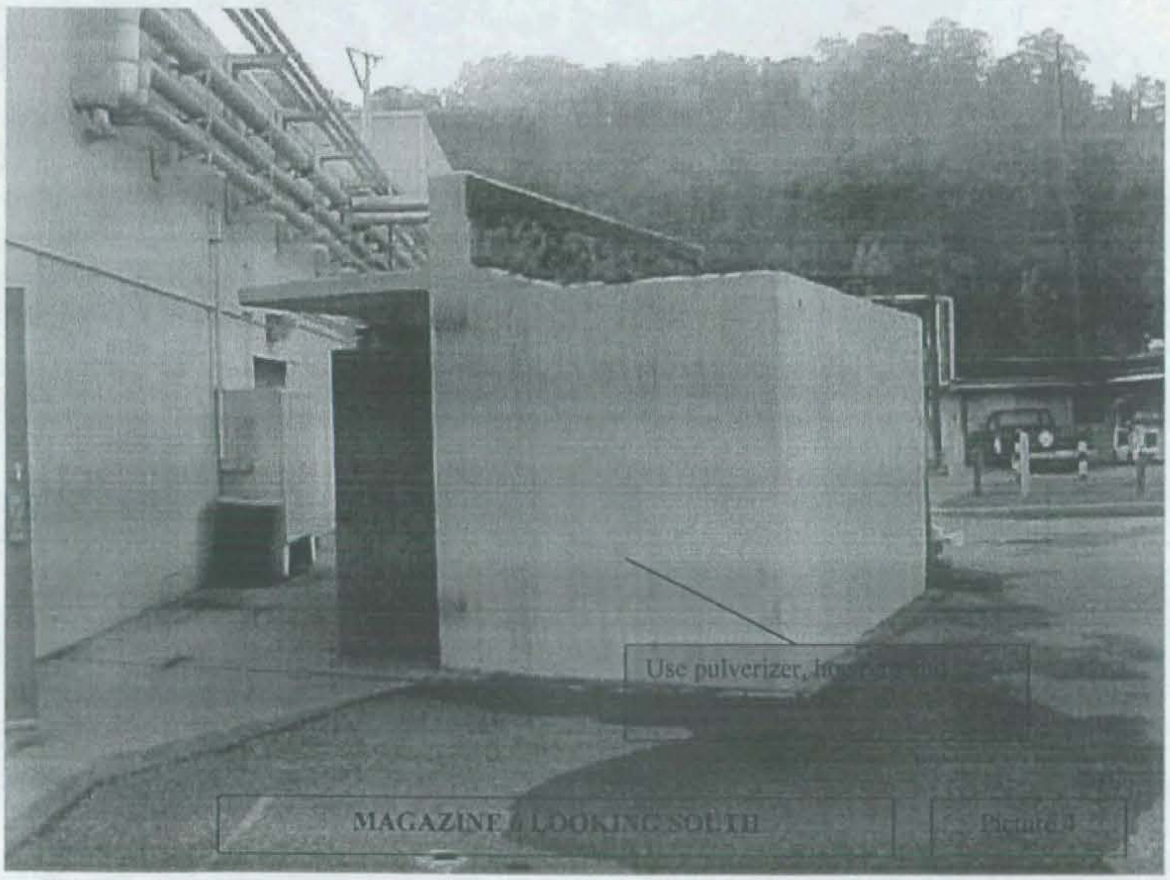


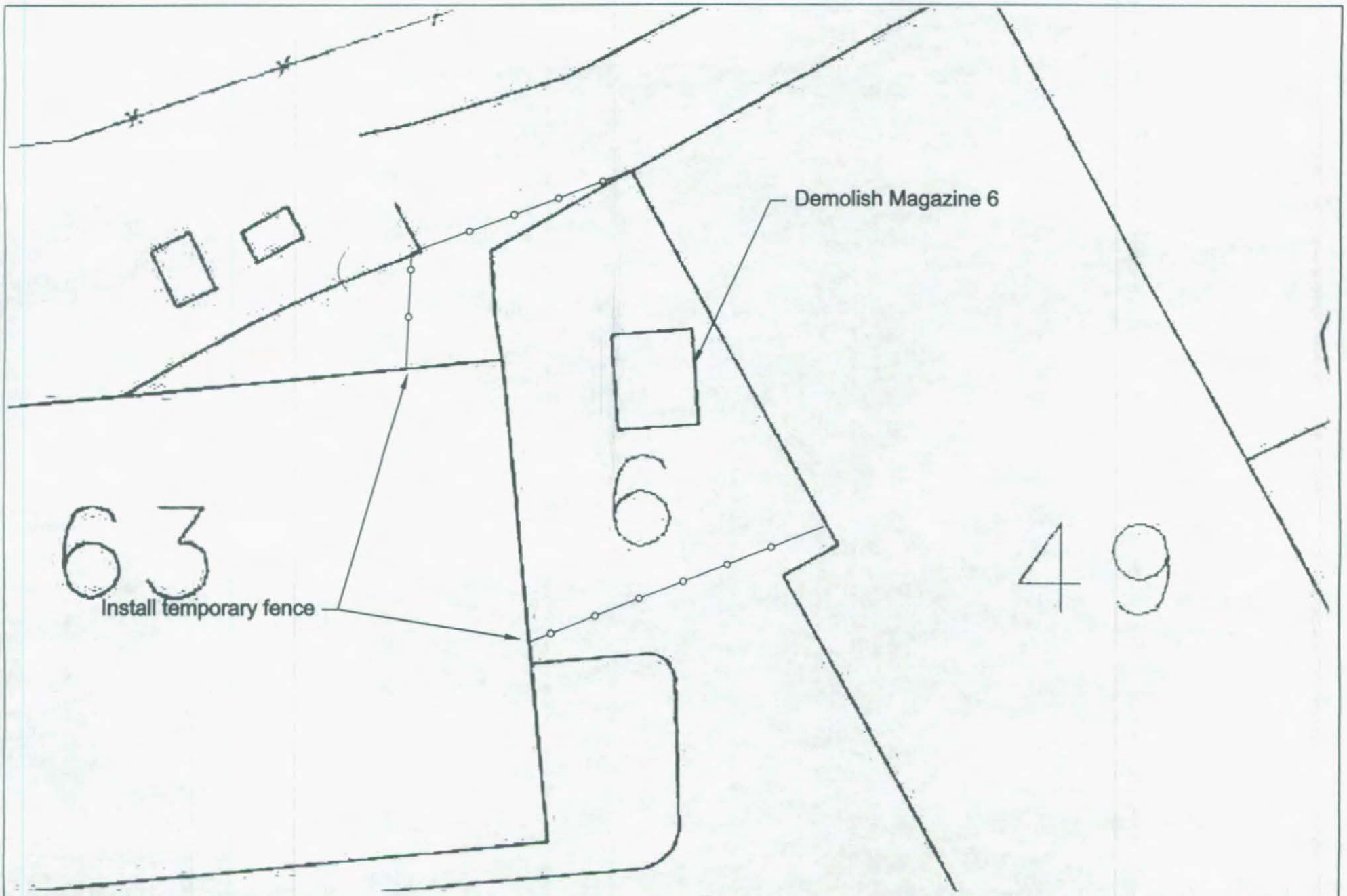
MAGAZINE 6 LOOKING NORTH

Picture 1

Picture 2


Be aware of overhead
communications lines


Use pulverizer,
MAGAZINE 1 LOOKING SOUTH
Picture 3



SMPP/TFV Project	Dwg. No. SM-092401-01	Rev: 0
Drawing: Magazine 6 Demo	By: RC Ransbottom	Date: 0/24/01

8. *Note: Comments, to identify activities/hazards that are common to multiple phases of the project. Identification of these items will facilitate the option of addressing the items once in the pre-job briefing, as opposed to redundantly listing them in the JSHAs for different phases.* **COMMENTS:**
Only one phase

Enter any review comment or issues in this section and/or information generated as a result of completing detailed work steps.

9. REVIEW SIGNATURES:

Work Package Preparer:	R.C. Forstotten	Date: 10/8/01	Phone: 4220
Job Supervisor:	N/A	Date: / /	Phone:
Superintendent/Foreman:	Michael M. Ethridge	Date: 10 24 01 / /	Phone: 3866
Industrial Safety & Hygiene:	Jay C. Wills	Date: 10/9/01	Phone: 4096
Rad. Controls:	[illegible]	Date: 10/24/01	Phone: 3535
ES&C:	Ronald Faulk	Date: 10/1/01	Phone: 4080
Waste Mgmt:	W.h. Davis	Date: 10/9/01	Phone: 3241
Bldg. Mgmt:	Doug L. Weidenbach	Date: 10/9/01	Phone: 3822
Peer Review:	N/A	Date: /	Phone:
Craft Core Team:	Jim [illegible]	Date: /	Phone:
Craft Core Team:	David [illegible]	Date: /	Phone:
Other:	Craft Core Team - [illegible]	Date: 10/29/01	Phone: 3663
Other:	N/A	Date: / /	Phone:

10. USQ SCREEN / DETERMINATION REQUIRED? ☐YES ☒NO

Brief Explaination

USQ Trained Person: N/A Date: / / Phone:

10. AUTHORIZATION SIGNATURE:

Project Manager: [illegible] Date: 10/31/01 Phone: 4071

11. WORK PACKAGE CLOSURE:

Job Supervisor: Date: / / Phone:

Project Manager: Date: / / Phone:

RETURN PHA TO IS&H AT JOB COMPLETION.

PRELIMINARY HAZARD ANALYSIS (PHA)
FOR WORK PACKAGE ACTIVITIES

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE INDUSTRIAL SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.). Including any notations for future Hazard Analyses. Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards, that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Blockage of exits or means of egress	X	1	Block adjacent exits to Buildings 49 and 63E [EGRESS]
Blockages/obstructions (Identify)			
Burning, welding, hot-work (Fire Watch)	X	1	Torch cut rebar [BURN]
Chemical compatibility of corrosives/flammables			
Chemical process safety			
Compressed gas cylinders			
Confined space entry			[CONFINE]
Crane operations, overhead or mobile			
Critical lifts (heavy or high value loads)			[CLIFT]
Electrical hazards		1	[LIVEL]
Elevated work/fall protection			[ELEV]
Emergency eyewash/shower available			[EWASH]
Emergency alarms or evacuation plans required			[EMERG]
Explosive/flammable atmosphere			
Explosives			
Fire protection system/equipment outage			[FIRE/EFIRE]
Fire Hazards Analysis Required of Demolition			[FHA/ADJA]
Flammable liquids/gases			[FLAM]
Forklifts, aerial lifts or material handling equipment			
Grounding of electrical equipment			
Hazards due to condition of facility or terrain (Identify)			
Hoisting and rigging			[HOIST]
Lighting/illumination/adequacy			[MLITE]

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE

Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis(JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Lockout/tagout of hazardous sources:			[LOTO/ISO]
☐ Electrical	X	1	LOTO of power feed to Magazine 6
☐ Mechanical (steam, hydraulic, pneumatic)			
☐ Interlocks			[ILOCK]
☐ Chemical			
☐ Radiological			
Machine guards			
Modification to Fire Wall/Door			[FIREWAL]
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)			
Off-shift work			
Outages of the plant public announcement (PA) system or the emergency notification system			[OUTAGE]
Overhead or underground utilities (Identify)			[UITL]
Penetrations into walls, floors, etc.			[PENETR]
Plastic sheeting or wood framing/enclosures			
Powder-actuated tools			
Public utilities (Identify)			[WATER]
Repetitive work			[ERGO]
Structural Modification			[STRUCT]
Special Fire Protection Equipment Required			[FIREQU]
Trenching/Shoring			[DIG]
Temporary heating facilities			
Temporary/portable buildings or structures			[FACIL]
Temporary service hook-ups (Identify)			
Traffic control/flagman			[TRAFIC]
Work in attics, ceilings, chases, or crawlspaces			
Work impacting adjacent normally occupied areas			[ADJAC/BMAPP/SIGNS/NOTIF]
Work Requiring Scaffolding, construction and inspection			[SCAFF]
Other (Specify)			

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE

Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis (JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section D if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Abrasive blast (☐ MSDS available)*			
Asbestos			[ASBEST]
Beryllium			
Blood-borne pathogens*			
Cadmium			
Carcinogens (☐ MSDS available)*			[CARC]
Chemicals/solvents (☐ MSDS available)*			[CHEM/MSDS]
Chlorofluorcarbon (CFC)			[CFC]
Coal, tar or asphalt products			
Coating/painting (☐ MSDS available)*			
Corrosives/acids/caustics (☐ MSDS available)*			
Dusty operations			[POWDER]
Hazardous Waste Operations (HAZWOPER)*			
High Pressure systems			[HIPRES]
Insulation/man-made mineral fibers (☐ MSDS available)*			
Lasers			
Lead			
Foam in Place Operations			
Mercury			
Noise in excess of 85 dBA			[NOISE]
Polychlorinated biphenyls (PCBs)			
Removal of ceiling tiles*			
Spraying/generation of mists*			
Temperature extremes (heat or cold stress)			[CRYRO/COLD/HEAT]
Ventilation or Air Monitoring requirements			[VENTIL/IH]
Welding, brazing, or thermal cutting operations	X	1	Torch cut rebar [BURN]
Other (specify)			

*NOTE: Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.

SECTION C, RADIOLOGICAL PROTECTION - TO BE COMPLETED BY RADIOLOGICAL CONTROLS REPRESENTATIVE

Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. RWP, ALARA Plan, etc.). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section D if additional space is needed.)

Item		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Location:	Controlled Area			
	Contamination Area			[STP]
	High Contamination Area			[STP]
	Radioactive Materials Storage Area			
	Airborne Radioactivity Area (STP or OBT)			
	Radiation Area			
	High Radiation Area			
	Very High Radiation Area			
	Other (Specify)			
Activities:	Criticality Safety Concerns			
	Digging/Soil Removal			[DIG]
	Surface destruction of radioactively contaminated materials or equipment?			[SURFAC]
	Welding, burning, or grinding?			[SURFAC]
	Hammering, chipping or scraping?			[SURFAC]
	Abrasive blasting?			[SURFAC]
	Dust-collecting equipment or systems?			
	Decontamination and clean-up?			
	Rad Waste Storage and Disposal Required			[RWSTOR/WASTE/CHAR]
	Other (Specify)			
Sources:	X-Ray machine/generator			[XRAY]
	Sealed radioactive sources			
	Unsealed radioactive sources			
Controls:	Radiological Work Permit			[RWP/RWP=JS/RWP=N/R/RPGEN]
	ALARA Plan			[ALARA]
	Air Flow Studies			[AIRFLOW/CAM]
	Urinalysis program			
	Preliminary or in-process characterization			[SURVPS/SURVIP]
	Anti-contamination clothing			
	Respiratory protection			[RESP]
	Needs Analysis Evaluation			
	Hazards Analysis			
	Engineering Controls			
	Administrative Controls			
	Supplemental dosimetry			
	Shielding			
	Personnel monitoring (frisking)			

SECTION D - OTHER CONDITIONS, CONCERNS, OR SUPPLEMENTAL INFORMATION FROM SECTIONS A THROUGH C

Identify Assembly Points:

Project/Activity: Demolish Magazine 6

Name: R.C. Ransbottom

JSHA CRITERIA CHECKLIST	YES	NO	N/A
1. Work performed with a 6 ft. or greater fall hazard, excluding portable ladders. See Item 14 for further requirements.		X	
2. Roof work requiring the use of fall protection (within 6 ft of an unprotected edge) or special fall protection procedures.		X	
3. Potential hazardous chemical exposure above action levels or permissible exposure limits (PELs), or ACGIH Threshold Limit Values (TLVs).		X	
4. Work activity in an immediately dangerous to life or health (IDLH) breathing hazard environment.		X	
5. Fire or explosion hazards. Are fire hazards beyond a Hot Work Permit? (Reference O2, MD-10286)		X	
6. Work within close proximity of live electrical than 50 volts, conductors, and/or work that requires multiple locks, multiple hazard sources, or complicated lockout/tagout circumstances. (Reference MD-10444, *Lockout/Tagout Procedure Manual*, for multiple energy lockout/tagout.)		X	
7. Any maintenance or repair of equipment under pressure where the pressure cannot be shut off and de-energized.		X	
8. Work with high or extreme exposure to ionizing or nonionizing radiation (reference MD-80036, Op 10002), noise, or heat or cold stress (reference D9, D13 & D16, MD-10286).		X	
9. Determined by an appropriate core team, building manager, member of general or executive management, or the IS&H manager to require a JSHA.	X		
10. Any onsite construction or service project directed to have JSHAs based on this procedure and/or instruction from project personnel or IS&H staff.	X		
11. Near-miss event with the potential for loss of life or limb or disabling injury/illness if repeated.		X	
12. Excessive trama/motion/vibration work situations or manual lifting involving heavy, large, and/or awkward-to-handle objects (reference MD-10407, *Ergonomics Program.*		X	
13. Unguarded, unmarked close clearance, pinch point, exposed moving machinery parts.		X	
14. Known potential falling object hazards (e.g., employees working above other employees, potential for dropping tools, falling equipment or material) or working in areas with the potential for flying objects (flying chips, sandblasting, etc.), exposure to sharp or protruding objects (e.g., working inside plenums, air mover ducts, etc.).		X	

MANDATORY JSHA REQUIRED TO ADDRESS ANY/ALL (YES) RESPONSES

JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO:
SM-6-100101

DATE: 10/01/01	_X_ NEW __ REV __ REV	**BUILDING:** Magazine 6	**JOB:** Demolish Magazine 6 SM-27780-00
DEPARTMENT/COMPANY: SMPP/TFV			**SECTION:** N/A
OCCUPATIONS: HD, DT, RCT			

SIGNATURES

ORIGINATOR:
REVIEW/REV:
REVIEW/REV:
APPROVED:
APPROVED:

REQUIRED PERSONAL PROTECTIVE EQUIPMENT:
Hard Hat, Safety glasses, safety vest, steel toe shoes

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:
N/A

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
Break the job down into basic steps that tell what is done first, what is done next, and so on. Record the job steps in their normal order of occurrence. Describe what is done, not the details of how it is done. Usually, three or four words are sufficient to describe each job step. For example, the job of "replacing a light bulb" may break down into basic steps as follows: 1. Bring and set up ladder 2. Ascend ladder 3. Remove light globe & bulb 4. Replace light bulb 5. Replace light globe 6. Descend ladder 7. Remove and store ladder	Ask yourself for each job what accidents/illnesses could occur to the employee doing the job. Record potential accidents/illnesses by combining one of the abbreviations below with the agent of contact. For example, "struck by a crane hook" is recorded "SB-crane hook." Number each potential accident. SB - Struck by CB - Contacted by SA - Struck against CW - Contact with CI - Caught in CO - Caught on IB - Caught between F - Fall SO - Strain-overexertion* E - Exposure (occ. illness) *Show ergonomic stresses as SO (repetitive trauma, single event strain, or awkward position)	For each potential accident/illness, ask yourself exactly what the employee should do or not do to avoid the accident/illness. Describe specific precautions in detail. Give each precaution the same number given in the potential accident (center column) to which it applies. Avoid generalities such as "Be alert," "Be careful," and "Take caution." Use simple do or don't statements; e.g., "Lock out main power switch," "Stand clear of lift before signaling," or "Check wrench grip before exerting full force." If necessary, explain how, as well as what, to do. Amount of detail is a matter of judgment. Describe ergonomic solutions (job redesign, new tools, worker lift assistance, etc.)
General Safety Note	A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	1) Be cognizant of your own safe work practices as well as those of your co-workers 2) Review any related safety procedures of which you are unsure 3) Utilize STOP WORK Authority as necessary
Pre-job meeting with involved personnel to discuss the work plan and safety requirements.	NA	This project engages in Enhanced Work Planning(EWP), a ISM process that evaluates and improves the approach by which work is identified, planned, approved, controlled, and executed.
Disconnect electrical power	Electrical shock	LOTO supply circuit per MD-10286 M3

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
Demolish magazine	Injury from being struck by flying material from shear or other heavy duty mechanized equipment	The manufacturer of the mechanical shear recommends a 75-foot exclusion zone to protect against personnel injury that may be caused by flying debris. No one will be permitted within a 75-foot distance of the shear while it is in operation. (Except-Heavy Duty Operators who will remain in the equipment cabs.) The exclusion zone for the hoe ram is 50 feet and other Heavy Duty mechanized equipment is 30 feet, except for the Bobcat which is 15 feet. Exception: a designated spotter may be closer as required.
Demolish magazine	Injury in construction area	Wear hard hat, safety glasses, and steel toe shoes at all times inside construction area. Wear safety vest while mechanical machinery, such as shear, grapple, and haulers, are in operation. (Exemption: equipment operators do not need to wear hard hats, safety glasses, or vests while inside the enclosed cab. However, the operator must wear hearing protection while operating the equipment) Wear gloves while handling demolition debris
Torch cut rebar	Fire hazard	Obtain and follow a Hot Work Permit per MD-10286 O2.

SIGN-OFF SHEET

I have read and understand the attached Job Specific Work Plan and JSHA:

Signature	Date	Department

Appendix C

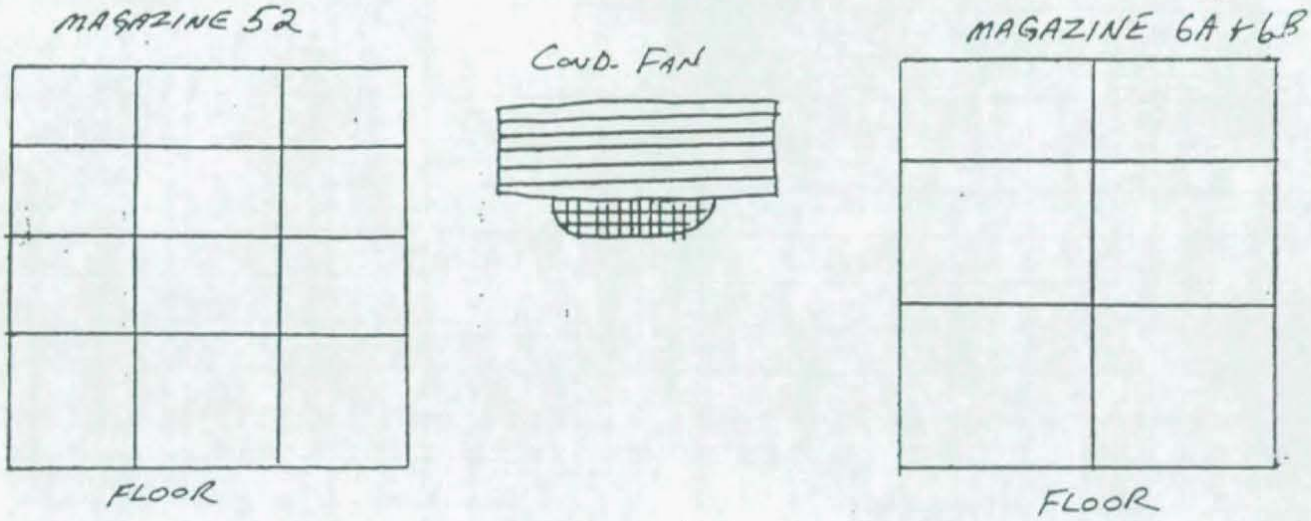
Radiological Summary

T#1 3-1 H1/38

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM)	SURVEY NO. 97-GA-215
PURPOSE: SURVEY MAGAZINE 52 AND MAGAZINE 6A + 6B FOR RELEASE PWRE# 040897-6-09	RWP NO. NA DATE: 4-18-97 TIME: AM+PM

MAP/DRAWING



LEGEND: # = mrem/hr (γ) whole body
E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number ....
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
MICRO R	3858	10-8-97
ELECTRA	5382/5383	9-11-97
N/A	N/A	N/A

Completed by: (Signature/HP#) [redacted]	Date: 4-18-97
Counted by: (Signature/HP#) [redacted]	Date: 4/21/97
Reviewed/Approved by: (Signature/HP#)	Date:

RADIOLOGICAL SURVEY DATA SHEET (cont.)

Charge Authorization No. _____

☒ Removable Contamination ☐ Airborne Activity (check one)

Swipes (dpm/100cm²) or Airborne (µCi/cc)

Sample #	β/γ	Alpha	Tritium	Comments
1				MAGAZINE 52
2				52
3				52
4				52
5				52
6				52
7				52
8				52
9				52
10				52
11				52
12				52
13				COND FAN 52
14				COND FAN 52
15				COND FAN 52
16				MAGAZINE 6A
17				6A
18				6A
19				6A
20				6A
21				6A
22				6A
23				6A
24				MAGAZINE 6B
25				6B
26				6B
27				6B
28				6B
29				6B
30				SHELF 6B

☒ Removable Contamination ☐ Airborne Activity (check one)

Swipes (dpm/100cm²) or Airborne (µCi/cc)

Sample #	β/γ	Alpha	Tritium	Comments
31				SHELF 6B
32				SHELF 6B
33				SHELF 6B
34				SHELF 6B
35				SHELF 6B
36				SHELF 6B
37				FIRE VENT [redacted] 6B
38				P. PREVENT [redacted] 6B

NO FURTHER ENTRY

COMMENTS:
TOOK DIRECT READINGS WITH ELECTRA α < 100dpm/100cm², β < 5000dpm/100cm²
TOOK DOSE RATE READINGS, READINGS WERE ALL NON DETECTABLE AT 30CM
WIPE RESULTS ATTACHED

Max. Activity on Large Area Wipe (dpm)	Tritium Airborne Activity (µCi/m³)
NA	NA

NOTES:
1. LSC results #3 corresponds to Sample #1 on this RSDS.
2. See MD-80036 10002 for calculations of WB, extremity and skin dose rates
3. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in

Page 2 of 2

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Blue
Data file name: SMEAR050
Batch Ended: 4/21/97 7:04
Cal. Due Date: 3/3/98
Serial Number: 26966-3

Alpha activity action level (DPM): 20
Beta activity action level (DPM): 200

Batch ID: T 97-GA-215 ROBINSON

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	1	1.71	2.04	<AL	0.00	1.31	<MDA
A2	2	0.00	2.04	<MDA	0.00	1.32	<MDA
A3	3	0.00	1.92	<MDA	0.00	1.25	<MDA
A4	4	0.00	2.01	<MDA	0.00	1.24	<MDA
B1	5	1.73	2.04	<AL	1.27	2.23	<MDA
B2	6	0.00	2.02	<MDA	0.21	1.84	<MDA
B3	7	0.00	1.93	<MDA	1.35	2.12	<MDA
B4	8	0.00	1.97	<MDA	1.60	2.15	<MDA
C1	9	0.00	1.99	<MDA	0.00	1.26	<MDA
C2	10	3.61	2.80	<AL	0.00	1.26	<MDA
C3	11	0.00	1.83	<MDA	0.00	1.16	<MDA
C4	12	0.00	1.87	<MDA	2.56	2.29	<AL
D1	13	0.00	2.04	<MDA	0.00	1.35	<MDA
D2	14	0.00	2.10	<MDA	0.00	1.38	<MDA
D3	15	1.47	1.94	<MDA	0.00	1.28	<MDA
D4	16	0.00	1.92	<MDA	0.00	1.30	<MDA
A1	17	0.00	2.06	<MDA	1.67	2.26	<MDA
A2	18	0.00	2.05	<MDA	1.75	2.28	<MDA
A3	19	0.00	1.93	<MDA	1.63	2.16	<MDA
A4	20	0.00	2.04	<MDA	2.96	2.49	<AL
B1	21	1.74	2.02	<AL	0.00	1.29	<MDA
B2	22	0.00	2.01	<MDA	0.00	1.30	<MDA
B3	23	0.00	1.94	<MDA	2.57	2.45	<MDA
B4	24	0.00	1.95	<MDA	0.00	1.24	<MDA
C1	25	0.00	2.03	<MDA	3.76	2.81	<AL
C2	26	0.00	1.98	<MDA	0.00	1.26	<MDA
C3	27	3.29	2.58	<AL	0.00	1.16	<MDA
C4	28	0.00	1.86	<MDA	1.41	1.98	<MDA
D1	29	0.00	2.04	<MDA	0.00	1.35	<MDA
D2	30	0.00	2.10	<MDA	0.00	1.38	<MDA
D3	31	0.00	1.96	<MDA	2.98	2.55	<AL
D4	32	0.00	1.93	<MDA	1.65	2.24	<MDA
A1	33	0.00	2.07	<MDA	2.98	2.61	<AL
A2	34	0.00	2.06	<MDA	3.07	2.63	<AL
A3	35	3.44	2.71	<AL	0.00	1.25	<MDA
A4	36	0.00	2.02	<MDA	0.47	1.76	<MDA
		0.00	2.02	<MDA	0.00	1.29	<MDA

2.00
Mode: DPM Nuclide: SM-PW-UG Quench Set: SM-PW-UG
round Subtract: 1st Vial

	LL	UL	LCR	2SZ	BKG
A:	0.5 -	18.6	0	0.0	7.80
B:	2.0 -	18.6	0	0.0	7.30
C:	20.0 -	2000	0	0.0	12.00

Indicator: tSIE/AEC
Std Terminator: Count
-215 ROBINSON (30-7 A1/38)
escence Correction On
idence Time(ns): 18
Before Burst(ns): Normal
col Data Filename: c:\data\PROT1.DAT
Data Filename: c:\data\SDATA1.DAT
rum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	7.80	7.30	3	B	660.14		0.00	12.00
0	2.00	426.20	394.70	0		606.29	856.30	88.04	0.00
1	2.00	0.70	0.20	0		578.22	1.42	9.09	4.50
2	2.00	0.00	0.00	0		518.46	0.00	0.00	3.50
3	2.00	0.00	0.00	0		598.48	0.00	0.00	0.00
4	2.00	0.00	0.00	0		635.68	0.00	0.00	0.00
5	2.00	0.20	0.20	0		550.87	0.41	8.96	0.00
6	2.00	0.00	0.00	0		552.69	0.00	0.00	1.50
7	2.00	0.00	0.00	0		624.70	0.00	0.00	0.00
8	2.00	0.00	0.00	9		606.33	0.00	0.00	0.50
9	2.00	1.20	0.20	0		610.96	2.40	9.21	0.00
10	2.00	0.00	0.00	0		611.78	0.00	0.00	0.00
11	2.00	0.00	0.00	8		531.10	0.00	0.00	0.00
12	2.00	0.00	0.20	0		625.70	0.00	0.00	1.50
13	2.00	0.00	0.00	0		614.87	0.00	0.00	0.50
14	2.00	1.20	1.20	0		568.24	2.44	9.34	1.00
15	2.00	0.00	0.00	0		565.20	0.00	0.00	0.00
16	2.00	0.00	0.00	0		504.10	0.00	0.00	0.00
17	2.00	0.70	0.70	0		466.30	1.61	10.30	0.00
18	2.00	0.00	0.00	0		562.67	0.00	0.00	1.50
19	2.00	1.20	1.70	0		618.73	2.39	9.15	0.00
20	2.00	0.00	0.00	0		497.75	0.00	0.00	5.00
21	2.00	0.70	0.20	0		584.25	1.42	9.07	3.00
22	2.00	0.70	0.70	6		605.75	1.41	9.01	0.00
23	2.00	0.00	0.00	0		618.82	0.00	0.00	0.50
24	2.00	0.00	0.00	0		585.04	0.00	0.00	2.00
25	2.00	0.20	0.20	0		536.91	0.42	9.25	0.00
26	2.00	0.20	0.70	0		537.22	0.42	9.24	0.50
27	2.00	0.00	0.00	0		537.83	0.00	0.00	0.00
28	2.00	1.70	2.20	0		557.89	3.46	9.59	2.50
29	2.00	0.20	0.70	0		529.05	0.43	9.42	2.00
30	2.00	0.00	0.00	0		553.44	0.00	0.00	0.00
31	2.00	0.00	0.00	0		551.07	0.00	0.00	0.00
32	2.00	0.70	1.20	0		606.18	1.41	9.01	0.00
33	2.00	0.20	0.70	0		545.45	0.41	9.07	0.50
34	2.00	0.00	0.00	0		571.90	0.00	0.00	2.00

Tocol #: 1 Pw H3 20cc #405828 User : 5268

S#	TIME	CPMA	CPMB	LUM FLAG	tSIE	DPM1	2Sigma	CPMC
5	2.00	0.00	0.00	0	621.36	0.00	0.00	4.00
6	2.00	0.00	0.00	0	582.14	0.00	0.00	2.00
7	2.00	0.70	0.20	0	605.81	1.41	9.01	0.00
8	2.00	0.20	0.20	0	597.35	0.40	8.81	0.00